

REVIEWS

ACTA BOTANICA ACADEMIAE SCIENTIARUM HUNGARICAE, Volume 27, numbers 1-2, 1981, pp. 1-280. (Eighteen papers, 7 of particular interest to Systematic Botanists. Xylotomic study of some woody plant species from Cuba, III, K. Babos and A. Borhidi; Rubiaceas Cubanas, I.—*Randia* L. y *Shaferocharis* Urb., A. Borhidi; *Iris* classification on the basis of generative characteristics, E. Melkó; Mosses of Vietnam, II, Tr. Ninh; *Noguchiodendron*, a new genus of the moss family Neckeraceae, Tr. Ninh and T. Pócs; Studies on African Calymperaceae, III. Conspectus of the African species of *Syrrhopodon* Schwagr, S. Orbán; *Monoclea forsteri* Hook. in Cuba, D. Reyes Montoya).

JOURNEY TO MEXICO DURING THE YEARS 1826 TO 1834. Berlandier, Jean Louis. Translated by Sheila M. Ohlendorf, Josette M. Bigelow, and Mary M. Standifer. Introduction by C. H. Muller. Botanical notes by C. H. Muller and Katherine K. Muller. Austin: Texas State Historical Association, 1980. Pp. xxxvi + 672. Illustrations, appendices, bibliography, index. Two Volumes. \$75.00.

"I purchased it because it's too valuable to general science to let it remain and rot in Matamoros," wrote Lieut. Couch from Brownsville to Spencer Fullerton Baird at the Smithsonian in February, 1853. Darius Nash Couch (1822-1897), "a distinguished officer and explorer of the Western Country," had learned of the *reliquiae* of the naturalist Jean Louis Berlandier who had drowned less than two years before. His horse had floundered crossing the Rio San Fernando south of Matamoros en route to Mexico City. Berlandier at age twenty two had arrived at Panuco, Mexico, December 15, 1826 to collect naturalia on behalf of the Swiss botanist, the elder A. P. de Candolle, and a small group of associates. An apprentice of de Candolle at Geneva, Berlandier had contributed to that great *opus*, the *Prodromus*, the earliest nineteenth century account of the world's flora. Less than a year after arriving in Mexico for de Candolle, Berlandier accepted, probably too soon, an appointment as a member of the Commission of Limits, organized by the then infant Republic of Mexico to collect information concerning the country's resources. General Mier y Teran was head of the Commission, which was dissolved sometime in November 1829.

But let Lieut. Couch tell it, as he related his experience with Berlandier's widow to Baird in two letters, 1853-54, as published in W. H. Dall's life of Baird (1915, 295):

"Berlandière then settled in Matamoros as a physician, where he was universally beloved from his kind amiable manner and regard for the sick poor of that city, being always ready to give advice and medicine to such without pay.

"He followed a very general custom in that country, living with a woman as his Mistress, but married her a short time before his death. The result of this

connexion was several children—one of them being a Captain of Mexican Infantry." Couch continues:

"Berlandière made many excursions into the country for the purpose of collecting in Botany, Nat. History, Mineralogy, &c., &c. Also, to make Astronomical and Meteorological observations; the latter made at Matamoros very complete and extensive—his Mss. show that he was also a thorough Geographer and Statistician.

"I have been three times to see Senora Berlandière's collection, they ask me \$1500. I told her of the offer from the Institution but she did not seem to assent to that at all. . . . Today the Senora sent me word that I might have the collection for what I offered \$500. . . . Well, I shall probably take it. The payment will cramp me a little, and delay my departure into the interior. . . . The collection is a labor of 24 years and ranges from the Sabine to California. There are about 150 bottles or diff. sizes, diff. species of vertebrata, mostly snakes, lizards, etc.—a few birds; several cubic feet of minerals; a box of plants, some twelve square feet of insects nicely preserved in glass cases; paintings of all the different Indian tribes in Old Mexico; Sketches of Mex. scenery, meteorological reports, observations, with piles of manuscripts relating to his labors. It's very valuable, probably been abused somewhat."

These handsome volumes are the latest and most important literary results from those "piles of manuscripts" inventoried at the time of the Couch purchase. This Berlandier record of early Texas nicely complements leading natural history journals of the period: Kalm's for Delaware-New Jersey, Nuttall's for Arkansas, Bernard Karl, Duke of Saxe-Weimar-Eisenach's on Mississippi Valley. We miss the eloquence of a William Bartram. Berlandier reminds us rather of Venegas writing of aboriginal Baja California. In 1969 John C. Ewers of the Smithsonian published a 209-page *The Indians of Texas in 1830* which included selections from the first English translation of Berlandier's notes, color plates done under his supervision, and illustrations of tribal artifacts. Ewer wrote that "in the future Berlandier may be remembered as one of the most enlightened and most objective amateur ethnographers of the American West during the frontier period."

Merely a hint of the extent of the Berlandier treasure was suggested in Couch's letter to Baird. What bearing, if any, Baird's naming the kingbird *Tyrannus couchii* or the Mexican jay, *Cyanocitta couchii* in 1858, both taken in Nuevo Leon, where Belandier collected, I cannot determine now. In 1857 Agassiz described the Texas Tortoise from Brownsville as *Xerobates berlandieri* (now known as *Gopherus berlandieri*). This tortoise was given a manuscript name by Berlandier though it is unlikely that Agassiz ever saw the manuscript of the *Journey*: (p 468):

"Two species of terrestrial turtles were found in those lowlying regions, and they are common on both banks of the Rio Bravo. One of them (*Testudo tuberculata* B. mss.) is remarkable for two rounded tubercles under the neck. It often serves as food for the military of the presidios when they travel in the wilderness. The other species of these turtles, which I have designated as *Testudo bicolor*, is very small and, like the preceding has at the anterior part

of the plastron two teeth, or prolongations. These are so long in the tuberculose turtle that they serve to support its neck and head."

Besides "some twelve square feet of insects nicely preserved in glass cases" delivered to the Smithsonian, the "Catalogue of Insects contenus dans le caisson D. M. No. 3" received at Geneva by de Candolle, and which I examined in April 1955, listed 566 insects taken in Texas with notes on food habits. As with a chrysalis this information may yet emerge. It has, however, been Berlandier's plant specimens that have raised the furor. The story of his "monumental work for botany in early Texas and in Mexico" has been told by Professor Samuel Wood Geiser with full documentation in his "defense" of Berlandier published in *Southwest Review* in 1933. Geiser faithfully related how de Candolle "stigmatized Berlandier as a mal-content and an ingrate," and how Asa Gray defamed his character without full knowledge and even less appreciation of the circumstances attending Berlandier's mission.

In the introduction to this present translation Professor C. H. Muller has deftly and fairly considered the misbegotten verdict of Berlandier's place in Southwestern botany: "Ignored for a century, Berlandier still has lost little of his botanical significance. His [2,351] collections hold priority throughout hundreds of thousands of square miles of Texas and Mexico." With the documents before him Muller concludes that "we are far from a solution to the problem of who wronged whom." Muller then proceeds to comment on some "likely causes of trouble." Berlandier who has "so recently come from poverty and obscurity" might have been excused "for dreaming himself a second Humboldt: the tragedy was that he half believed it." He continued to send dried plant specimens to de Candolle at Geneva even eighteen months after his contract had expired. That he gave manuscript names to the plants he discovered was not a breach of contract, merely the human aspiration some glory might be his. Knowledgeable collectors had done as much: Joseph Banks on Cook's First Voyage, Frederick Pursh on his tours for Professor Barton, and David Douglas when he was ransacking the Oregon forests for the Horticultural Society of London. The sting came when Asa Gray, avaricious on occasion (as when he suppressed J. L. Riddell's Louisiana publication intended for the Smithsonian) and jealous of his supremacy in American systematic botany, detected that Berlandier had *published* a few of his novelties from Texas as early as 1832. This, in Gray's estimate, was first an infringement of the rights of de Candolle who was then writing the *Prodromus* accounts and then a nettling annoyance in the completion of his own *Synoptical Flora of North America*. Gray had met the elder de Candolle and his son Alphonse at Geneva in 1839, and considered them "his most important acquaintances on the Continent." Surely it was his regard for them that, as Gray's biographer, A. Hunter Dupree re-

marked, Gray considered Berlandier "a dishonest knave." Muller explains Gray's misunderstanding of Berlandier's numbering scheme which in fact carried no intent to deceive. General Teran's wish to establish a museum of natural history for Mexico did not materialize. Berlandier had retained a duplicate set for the museum. Gray passed judgement concerning the allotment he had sent to Geneva in his letter to de Candolle May 29, 1855, preserved in the archives of the Conservatoire Botanique: "After all they will contain little that will be new for you: for Berlandier I find was so dishonest as to divide his collection of any given species, made all on the same day into 2, 3 sometimes even 4 or 5 portions, which he sent to Geneva at different times and under different numbers. And he also gathered the same species at different times and places so that the same thing occurs over and over, e.g. *Indigofera leptosepala* 425, 622, 1002, 1445, 2432 *Karwinskia humboldtiana* 162, 421, 689, 706, 820, 889, 2340, 2359."

After the death in 1863 of the Kentucky botanist Dr. Charles Wilkins Short, whom Gray considered "one of my most valued friends," Gray wrote to W. J. Hooker that Short and William Darlington "were both hearty and true Christian gentlemen." Short had purchased Berlandier's plant specimens for \$400 when the Smithsonian had declined them. Gray had agreed to identify and distribute sets to botanists. In a letter from Gray to Short, dated December 26, 1854, at the Academy of Natural Sciences at Philadelphia, he wrote that Berlandier's collections "from 1800 down to 940" had been meagre and superlatively wretched! To get them out of the way I have already dispatched to Hooker, Engelmann & Torrey the portions destined for them down to 1800. How shall I send yours? Gray wrote again on July 5, 1855, that he was sending "a specimen (poor, but do not despise it) of a plant I found among Berlandier's rubbish, which proves to be a very distinct new genus which I have just characterized, naming it [not after its discoverer, but] after Ravenel of S. Car[olina]."

"On balance," writes Muller, "the impatience of A. P. de Candolle, the less than fair filial loyalty of Alphonse de Candolle, the divided loyalties and self-serving pretensions of Berlandier, the self-righteous sermons of C. W. Short [quoted by Muller], and the arrogant attacks of Asa Gray, one is tempted to conclude that these characters thoroughly deserved one another."

But what does Berlandier's *Journal*, now available for the first time, offer? Among hundreds of topics, vignettes of persons and places. For example, of Austin we read (p. 321):

"Some days after our arrival the founder of the colony, Mr. Stephen Austin, arrived—an enterprising man endowed with a wily policy as well as a great deal of talent. That colonist always knew how to conduct himself to lull authorities to sleep, and they opened their shortsighted eyes only when the

colony had taken on a progress difficult to halt. From his instructive conversation we learned several details of the geography of Texas, for at that time he had already gathered the materials which served him for publishing the map of that department, the only one which up to this day can give an idea of Texas."

Of changes in the lower Mississippi Berlandier wrote:

"Balise—a sort of small fort erected about 1752—by 1770 had become one mile removed from the estuary of the river because of the formation of alluvial deposits. It has been calculated, going by the fact, that the earth gains about two leagues over the sea in one hundred years, and that consequently a cypress found close to New Orleans at a depth of twenty feet must have been buried about twelve centuries ago. I have a shell covered with a figwort that was found close to one hundred feet down in a wall being dug on the banks of Lake Pontchartrain. The depth would make the epoch in which it was buried date back to more than five or six thousand years."

He described New Orleans (p. 401):

"The port is magnificent. Sometimes one can see floating there more than five or six hundred ships from all the civilized nations of Europe and the New World. Frigates, corvettes, and the smallest ships go up the waterway without danger . . . The aspect of those ambulatory houses creates an especial waterscape when they are seen going in every direction over the waves."

Berlandier left New Orleans May 8, 1829 to return to Texas where, for the ethnographer he has left portraits of, among others, the "Tancahueses" (p. 312) the Tonkawas:

"The women, and in particular the oldest ones, were the busiest. Some tanned hides; others were cleaning a recently killed animal; others built cabins, etc.; in a word, activity prevailed, except among the men. . . . The women, much busier, are much dirtier." A watercolor of the Tonkawa Indians southeast of San Antonio, by a member of the expedition, but supervised and labeled by Berlandier, was included in Ewer's *Indians of Texas in 1830* (plate 5).

The Mullers' natural history notes are especially rewarding. And all are documented with in-place footnotes by specialists. Muller's familiarity with the countryside is abundantly shown. For example, in a passage describing the vegetation between Tampico and Matamoros (p. 503), the veteran oaks are reported as long since cut but that juveniles are abundant today. Berlandier observed that between Matamoros and Santa Teresa, Tamaulipas (p. 468) that "in the midst of flooded grazing lands, the ants—surprised by the water—clustered in balls and thus supported themselves en masse without drowning—for several days and often for several weeks—until the water receded. The tarantulas, also surprised in their burrows by the inundation, were perched on the tips of ligneous plants, where they had lived as prisoners for a long time."

It would be difficult to imagine a certain contemporary of Berlandier, a Harvard botany professor, sampling a meal described (p. 351):

"At supper time we ate a small digitigrade carnivore known in the country as the zorillo, which is a species of skunk . . . they remove the anal glands and, having burned the hair, they cook it over coals. Despite the repugnance which I then had for that food, I was very soon convinced to the contrary, and I believed myself to be eating suckling pig."

Rattlesnakes, to no surprise, were "extremely common . . . there are so many that it is difficult to take one hundred paces on the highway without finding one of these venomous reptiles or, at least, traces of it." Remedies are noticed (p. 459):

"After one is bitten, he must drink the bile from the liver of the snake, mixed with a little water, which will preserve him from all the consequences of the bite."

Laurence Klauber in his two volumes, *The Rattlesnake*, mentions John Josselyn's note in *New England Rarities Discovered* (1672)! that bruised liver was to be applied to the serpent's bite. Berlandier concludes, "Lastly, the peasants have observed that tobacco intoxicates that viper or puts it to sleep (ordinarily at night it scarcely moves at all). Thus, in order to avoid an encounter, they place their tobacco a certain distance off: the viper, they say, is attracted by its odor, arrives at once, becomes inebriated, and stays there until the next day." Yes, there is the rope—this time black to simulate the rattler's "cruellest enemy" the black snake—to be laid outside the reposing traveler.

Berlandier referred to Michaux's *Flora* (p. 330, etc.) but did not mention Claude Robin's account of the Louisiana flora which comments on medicinal properties. He noted that the castor oil plant (*Ricinus communis*), introduced from Africa, always grew as an escape at no great distance from the dwellings of Man. Some ironies of priority include Drummond's phlox first collected by Berlandier, but described from subsequent gatherings of Thomas Drummond. "*Zygophyllum resinosum*" was Berlandier's apt name for the creosote bush which he first encountered in the vicinity of San Luis Potosi. John Torrey penned his identification on two of Berlandier's plates, as "*Sarcostemma*" and "*Echinodorus rostratus* var." confirming that Torrey not only had specimens but saw the plates.

Only two of Berlandier's bird drawings have been included in this work—zoologists may wish for more. "*Cassicus niger*" perhaps a misreading of the ms. for *Cassidix*, a name established by Lesson for the Boat-tailed grackle—is identified as perhaps the bird *C. mexicanus* (Gmelin) or the Common grackle, *Quiscalus quiscula* (Linn.). The Western meadowlark appears on the same plate (opp. p. 72) labelled "*Sturnella hypocrepis* var—*S. torquata*" by Berlandier. That Audubon named the meadowlark *Sturnella neglecta* in his *Birds of America* in 1844 only emphasizes the 'neglect' of Berlandier's novelties.

Berlandier had noted two birds on his arrival at Panuco near Tampico (p. 33): the roseate spoonbill and "scissor-bill", certainly his name for the Black Skimmer. When he reports "cedro" as used for pirogues, could he have meant the Bald cypress, well known for that use in Louisiana? On the other hand he associated the binomial *Taxodium distichum* with "sabino" later in his journal (p. 584). What has been determined as pecan (p. 324) may have been the Bitter pecan, *Carya aquatica* (Michx. f.) Nutt. According to the records in Geneva Berlandier collected ten numbers (1937-1946) on the banks of the Mississippi River at New Orleans. Two of these are represented in the British Museum (Natural History) collections, but both are numbered "1946:" "Calliopsis cardaminaefolia DC." [*Coreopsis cardaminaefolia* (DC.) Nutt.] and "Senecio mississippiensis DC" [*S. glabellus* Poir.]

For all the fresh commentary on old Texas that Berlandier offers in this *Journey* there lingers a sadness. Sadness that debilitating malaria, abortive planning, and human frailties destroyed the full and faithful reporting of the first scientific fieldwork in what was then the northern reaches of Mexico. Opportunistic to the point of overstepping canons of friendship, Berlandier left a shadowed portrait. This posse has placed him in fine considered perspective.—Joseph Ewan, *Ida Richardson Prof. of Botany, Emeritus, Tulane University, New Orleans, LA 70118.*